

IN THE CLAIMS:

1.-50. (Cancelled)

51. (Currently Amended) A plasma display panel driving method for a plasma display panel in which a plurality of discharge cells having walls are arranged, each discharge cell having a pair of a first electrode and a second electrode, the plasma display panel driving method including the following step to perform image display:

5 a set-up step for applying a set-up pulse to each of the plurality of discharge cells to increase wall charges in the discharge cells, wherein the set-up pulse applied in the set-up step has a waveform that rises at an average voltage change rate of no greater than 6 V/ μ s, and that starts to fall at a rate greater than the average voltage change rate at a time period of the rising.

52. (Previously Presented) The plasma display panel driving method according to Claim 51,

 wherein the set-up pulse applied in the set-up step rises at the average voltage change rate of no less than 5.25 V/ μ s and no greater than 6 V/ μ s.

53. (Previously Presented) The plasma display panel driving method according to Claim 51,

 wherein the set-up pulse applied in the set-up step rises at the average voltage change rate of no less than 4.2 V/ μ s and no greater than 5.25 V/ μ s.

54. (Previously Presented) The plasma display panel driving method according to Claim 51,

wherein the set-up pulse applied in the set-up step rises at the average voltage change rate of no less than $3.5 \text{ V}/\mu\text{s}$ and no greater than $4.2 \text{ V}/\mu\text{s}$.

55. (Previously Presented) The plasma display panel driving method according to Claim 51,

wherein the set-up pulse applied in the set-up step rises at the average voltage change rate of no less than $2.625 \text{ V}/\mu\text{s}$ and no greater than $3.5 \text{ V}/\mu\text{s}$.

56. (Previously Presented) The plasma display panel driving method according to Claim 51,

wherein the set-up pulse applied in the set-up step rises at the average voltage change rate of no less than $2.1 \text{ V}/\mu\text{s}$ and no greater than $2.625 \text{ V}/\mu\text{s}$.

57. (Previously Presented) The plasma display panel driving method according to Claim 51,

wherein the set-up pulse applied in the set-up step rises at the average voltage change rate of no less than $1 \text{ V}/\mu\text{s}$ and no greater than $2.1 \text{ V}/\mu\text{s}$.

58. (Currently Amended) A plasma display panel driving method for a plasma display panel in which a plurality of discharge cells having walls are arranged, each discharge cell having a pair of a first electrode and a second electrode, the plasma display panel driving method including the following steps to perform image display:

5 a set-up step for applying a set-up pulse to each of the plurality of discharge cells to increase wall charges in the discharge cells; and

a write step for applying a write pulse to selected discharge cells of the plurality of discharge cells based on image data input,

wherein in the set-up step, the set-up pulse is applied via the first electrodes and
10 has a waveform that rises at an average voltage change rate of no greater than $6 \text{ V}/\mu\text{s}$ and that starts to fall at a rate greater than the average voltage change rate at a time period of the rising, and

wherein in the write step, the write pulse is applied to the selected discharge cells via the first electrodes.

59. (Previously Presented) The plasma display panel driving method according to Claim 58,

wherein the set-up pulse applied in the set-up step rises at the average voltage change rate of no less than $5.25 \text{ V}/\mu\text{s}$ and no greater than $6 \text{ V}/\mu\text{s}$.

60. (Previously Presented) The plasma display panel driving method according to Claim 58,

wherein the set-up pulse applied in the set-up step rises at the average voltage change rate of no less than $4.2 \text{ V}/\mu\text{s}$ and no greater than $5.25 \text{ V}/\mu\text{s}$.

61. (Previously Presented) The plasma display panel driving method according to Claim 58,

wherein the set-up pulse applied in the set-up step rises at the average voltage change rate of no less than $3.5 \text{ V}/\mu\text{s}$ and no greater than $4.2 \text{ V}/\mu\text{s}$.

62. (Previously Presented) The plasma display panel driving method according to Claim 58,

wherein the set-up pulse applied in the setup step rises at the average voltage change rate of no less than $2.625 \text{ V}/\mu\text{s}$ and no greater than $3.5 \text{ V}/\mu\text{s}$.

63. (Previously Presented) The plasma display panel driving method according to Claim 58,

wherein the set-up pulse applied in the set-up step rises at the average voltage change rate of no less than $2.1 \text{ V}/\mu\text{s}$ and no greater than $2.625 \text{ V}/\mu\text{s}$.

64. (Previously Presented) The plasma display panel driving method according to Claim 58,

wherein the set-up pulse applied in the set-up step rises at the average voltage change rate of no less than $1 \text{ V}/\mu\text{s}$ and no greater than $2.1 \text{ V}/\mu\text{s}$.

65. (Currently Amended) A plasma display apparatus comprising:

a plasma display panel that includes a plurality of pairs of a first electrode and a second electrode, and

a plurality of discharge cells with walls, each discharge cell having one of the
5 pairs of the first electrode and the second electrode; and

a driving circuit operable to drive the plasma display panel by including a set-up period of applying a set-up pulse to the discharge cells to increase wall charges in the discharge cells, wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse

having a waveform that rises at an average voltage change rate of no greater than $6 \text{ V}/\mu\text{s}$ and that
10 starts to fall at a rate greater than the average voltage change rate at a time period of the rising.

66. (Previously Presented) The plasma display apparatus according to Claim 65,
wherein the driving circuit is operable to apply, during the set-up period, the set-
up pulse that rises at the average voltage change rate of no less than $5.25 \text{ V}/\mu\text{s}$ and no greater
than $6 \text{ V}/\mu\text{s}$.

67. (Previously Presented) The plasma display apparatus according to Claim 65,
wherein the driving circuit is operable to apply, during the set-up period, the set-
up pulse that rises at the average voltage change rate of no less than $4.2 \text{ V}/\mu\text{s}$ and no greater than
 $5.25 \text{ V}/\mu\text{s}$.

68. (Previously Presented) The plasma display apparatus according to Claim 65,
wherein the driving circuit is operable to apply, during the set-up period, the set-
up pulse that rises at the average voltage change rate of no less than $3.5 \text{ V}/\mu\text{s}$ and no greater than
 $4.2 \text{ V}/\mu\text{s}$.

69. (Previously Presented) The plasma display apparatus according to Claim 65,
wherein the driving circuit is operable to apply, during the set-up period, the set-
up pulse that rises at the average voltage change rate of no less than $2.625 \text{ V}/\mu\text{s}$ and no greater
than $3.5 \text{ V}/\mu\text{s}$.

70. (Previously Presented) The plasma display apparatus according to Claim 65,
wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at the average voltage change rate of no less than $2.1 \text{ V}/\mu\text{s}$ and no greater than $2.625 \text{ V}/\mu\text{s}$.

71. (Previously Presented) The plasma display apparatus according to Claim 65,
wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at the average voltage change rate of no less than $1 \text{ V}/\mu\text{s}$ and no greater than $2.1 \text{ V}/\mu\text{s}$.

72. (Currently Amended) A plasma display apparatus comprising:
a plasma display panel that includes a plurality of pairs of a first electrode and a second electrode, and

a plurality of discharge cells with walls, each discharge cell having one of the
5 pairs of the first electrode and the second electrode; and

a driving circuit operable to drive the plasma display panel by including a set-up period of applying a set-up pulse to the discharge cells to increase wall charges in the discharge cells, and

a write period of applying a write pulse to selected discharge cells of the plurality
10 of discharge cells based on image data input,

wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse via the first electrodes, the set-up pulse having a waveform that rises at an average voltage change rate of no greater than $6 \text{ V}/\mu\text{s}$ and that starts to fall at a rate greater than the average voltage change rate at a time period of the rising, and

15 wherein the driving circuit is operable to apply, during the write period, the write pulse to the selected discharge cells via the first electrodes.

73. (Previously Presented) The plasma display apparatus according to Claim 72,
 wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at the average voltage change rate of no less than $5.25 \text{ V}/\mu\text{s}$ and no greater than $6 \text{ V}/\mu\text{s}$.

74. (Previously Presented) The plasma display apparatus according to Claim 72,
 wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at the average voltage change rate of no less than $4.2 \text{ V}/\mu\text{s}$ and no greater than $5.25 \text{ V}/\mu\text{s}$.

75. (Previously Presented) The plasma display apparatus according to Claim 72,
 wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at the average voltage change rate of no less than $3.5 \text{ V}/\mu\text{s}$ and no greater than $4.2 \text{ V}/\mu\text{s}$.

76. (Previously Presented) The plasma display apparatus according to Claim 72,
 wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at the average voltage change rate of no less than $2.625 \text{ V}/\mu\text{s}$ and no greater than $3.5 \text{ V}/\mu\text{s}$.

77. (Previously Presented) The plasma display apparatus according to Claim 72,
wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at the average voltage change rate of no less than $2.1 \text{ V}/\mu\text{s}$ and no greater than $2.625 \text{ V}/\mu\text{s}$.

78. (Previously Presented) The plasma display apparatus according to Claim 72,
wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at the average voltage change rate of no less than $1 \text{ V}/\mu\text{s}$ and no greater than $2.1 \text{ V}/\mu\text{s}$.

79. (Previously Presented) The plasma display apparatus according to Claim 72,
wherein the driving circuit is operable to apply, during the set-up period, a portion of the set-up pulse having a characteristic of rising at an average voltage change rate of no greater than $6 \text{ V}/\mu\text{s}$ from 0 volts to a peak voltage and falling from the peak voltage to 0 volts at a rate greater than the average voltage change rate at a time period of the rising.

80. (Currently Amended) A plasma display panel driving method for a plasma display panel in which a plurality of discharge cells having walls are arranged, each discharge cell having a pair of a first electrode and a second electrode, the plasma display panel driving method including the following step to perform image display:

a set-up step for applying a set-up pulse to each of the plurality of discharge cells to increase wall charges in the discharge cells, wherein a portion of the set-up pulse applied in the set-up step has a waveform that rises at an average voltage change rate of no greater than 6

V/ μ s from 0 volts to a peak voltage and that falls from the peak voltage to 0 volts at a rate greater than the average voltage change rate at a time period of the rising.

81. (Currently Amended) In a plasma display panel driving method for a plasma display panel in which a plurality of discharge cells having walls are arranged, each discharge cell having a pair of a first electrode and a second electrode, the plasma display panel driving method applying a voltage waveform to perform an image display, the improvement comprising:

5 a set-up step for applying a set-up pulse to each of the plurality of discharge cells to increase wall charges in the discharge cells, wherein a portion of the set-up pulse applied in the set-up step has a waveform that rises at an average voltage change rate of no greater than 6 V/ μ s from a rising set up low point to a maximum value and falls at a rate greater than the average voltage change rate at a time period of the rising to a falling setup low point.

82. (New) A plasma display panel driving method for a plasma display panel having a plurality of pairs of display electrodes, a plurality of data electrodes arranged to intersect the display electrodes, and a plurality of discharge cells each formed in a space between the display electrodes and the data electrodes, the plasma display panel driving method repeating the following steps to perform image display:

5 a set-up step for applying a set-up pulse to one of each pair of display electrodes;

a write step for applying a write pulse to selected data electrodes of the plurality of data electrodes to write an image; and

a discharge sustain step for applying at least one sustain pulse across the pairs of display electrodes after the write step to perform a sustain discharge in discharge cells related to the written image,

10 wherein the set-up pulse applied during the set-up step has a waveform that rises at an average voltage change rate of no greater than $6 \text{ V}/\mu\text{s}$, and

wherein in the write step, a scan pulse is applied to one of each pair of display electrodes, the scan pulse comprising a drop in voltage from a predetermined reference potential.

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83. (New) The plasma display panel driving method according to Claim 82, wherein the set-up pulse applied in the setup step rises at an average voltage change rate of no less than $4.2 \text{ V}/\mu\text{s}$ and no greater than $5.25 \text{ V}/\mu\text{s}$.

84. (New) The plasma display panel driving method according to Claim 82, wherein the set-up pulse applied in the set-up step rises at an average voltage change rate of no less than $3.5 \text{ V}/\mu\text{s}$ and no greater than $4.2 \text{ V}/\mu\text{s}$.

85. (New) The plasma display panel driving method according to Claim 82, wherein the set-up pulse applied in the set-up step rises at an average voltage change rate of no less than $2.625 \text{ V}/\mu\text{s}$ and no greater than $3.5 \text{ V}/\mu\text{s}$.

86. (New) The plasma display panel driving method according to Claim 82, wherein the set-up pulse applied in the set-up step rises at an average voltage change rate of no less than $2.1 \text{ V}/\mu\text{s}$ and no greater than $2.625 \text{ V}/\mu\text{s}$.

87. (New) The plasma display panel driving method according to Claim 82, wherein the set-up pulse applied in the set-up step rises at an average voltage change rate of no less than $1 \text{ V}/\mu\text{s}$ and no greater than $2.1 \text{ V}/\mu\text{s}$.

88. (New) A plasma display apparatus comprising:

a plasma display panel that includes a plurality of pairs of display electrodes, a plurality of data electrodes arranged to intersect the display electrodes, and a plurality of discharge cells each formed in a space between the display electrodes and the data electrodes;

5 and

a driving circuit operable to drive the plasma display panel by repeating a set-up period of applying a set-up pulse to one of each pair of display electrodes, a write period of applying a write pulse to selected data electrodes of the plurality of data electrodes to write an image, and a discharge sustain period for applying at least one sustain pulse across the pair of display electrodes after the write step to perform a sustain discharge in discharge cells related to the written image,

wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse having a waveform that rises at an average voltage change rate of no greater than 6 V/ μ s, and to apply, during the write period, a scan pulse to one of each pair of display electrodes, the scan pulse comprising a drop in voltage from a predetermined reference potential.

89. (New) The plasma display apparatus according to Claim 88, wherein the scan pulse is a negative logic pulse.

90. (New) The plasma display apparatus according to Claim 88,

wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at an average voltage change rate of no less than 4.2 V/ μ s and no greater than 5.25 V/ μ s.

91. (New) The plasma display apparatus according to Claim 88,
wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at an average voltage change rate of no less than $3.5 \text{ V}/\mu\text{s}$ and no greater than $4.2 \text{ V}/\mu\text{s}$.

92. (New) The plasma display apparatus according to Claim 88,
wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at an average voltage change rate of no less than $2.625 \text{ V}/\mu\text{s}$ and no greater than $3.5 \text{ V}/\mu\text{s}$.

93. (New) The plasma display apparatus according to Claim 88,
wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at an average voltage change rate of no less than $2.1 \text{ V}/\mu\text{s}$ and no greater than $2.625 \text{ V}/\mu\text{s}$.

94. (New) The plasma display apparatus according to Claim 88,
wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at an average voltage change rate of no less than $1 \text{ V}/\mu\text{s}$ and no greater than $2.1 \text{ V}/\mu\text{s}$.

95. (New) The plasma display apparatus according to Claim 89,
wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at an average voltage change rate of no less than $4.2 \text{ V}/\mu\text{s}$ and no greater than $5.25 \text{ V}/\mu\text{s}$.

96. (New) The plasma display apparatus according to Claim 89,
wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at an average voltage change rate of no less than $3.5 \text{ V}/\mu\text{s}$ and no greater than $4.2 \text{ V}/\mu\text{s}$.

97. (New) The plasma display apparatus according to Claim 89,
wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at an average voltage change rate of no less than $2.625 \text{ V}/\mu\text{s}$ and no greater than $3.5 \text{ V}/\mu\text{s}$.

98. (New) The plasma display apparatus according to Claim 89,
wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at an average voltage change rate of no less than $2.1 \text{ V}/\mu\text{s}$ and no greater than $2.625 \text{ V}/\mu\text{s}$.

99. (New) The plasma display apparatus according to Claim 89,
wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at an average voltage change rate of no less than $1 \text{ V}/\mu\text{s}$ and no greater than $2.1 \text{ V}/\mu\text{s}$.